

Collaborative Outreach: Organic Process

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Collaborative research is all the rage these days, although most organizations have difficulty forcing partnerships. Successful collaboration resembles an organic process, with interaction back and forth between researchers as the discussion widens to bring other colleagues into the collaboration. Recent developments surrounding Daysmoke, a model developed by Gary Achtemeier, illustrate this process. The Smoke Management Team (SMT—Achtemeier, Scott Goodrick, Yongqiang Liu, Ken Forbus, and Tim Giddens) worked feverishly over the summer to link Daysmoke with CMAQ, the regional air quality model used by EPA. Daysmoke models smoke plume transport, replacing older models such as VSmoke. As reported in last month's Project Leader's Report, Gary developed a "representative" vertical smoke profile for Greg Stella, a modeling contractor for VISTAS, to use in testing CMAQ. The profile was based on sounding data provided for Florida by Yong Liu and transformed to the coordinate system used in Stella's modeling protocol. The air quality community's interest in this work was sparked by presentations made by Achtemeier, Liu, and Goodrick at various meetings, and Gary recently participated in a conference call with representatives from FS, WRAP, VISTAS, and EPA. The call, moderated by Pete Laham of the WO, was mostly devoted to discussing the smoke plume test case and how the SMT is proceeding in linking Daysmoke with CMAQ. The SMT met with representatives from EPA this month to set up collaboration for a model inter-comparison study between the EPA smoke plume model CalPuff and the SMT model, Daysmoke. The groups will share weather data. The EPA team will Shawn Urbanski of the National Center Atmospheric Research (NCAR) to use Daysmoke in WRF/CHEM, another regional air quality model. Urbanski is interested in testing Daysmoke as a plume rise model for input to WRF/CHEM. Urbanski is working on a test case of the 2002 Hayman fire in Colorado. Initially, he will use his own fire emissions. Scott Goodrick has successfully matched Daysmoke with an emissions production model, which means better simulation of hourly emissions and the resulting vertical distribution. Scott may apply his fire emissions-Daysmoke approach to the Hayman fire, and compare the modeled emission approach used by Scott to the current empirical approach used by NCAR. The payoff in the end will be air quality planning and regulations based on realistic emissions from wildland fire. Some lessons for research management are that essential elements of collaborative research are addressing pressing questions of more than academic interest, good ideas, approaches, and sound science, and supporting opportunities for scientists to gather and interact. run CalPuff and the SMT team will run Daysmoke. Following initial contacts at the FCAMMS meeting in August, Gary offered to partner with



► Illustration of Daysmoke model links it to CMAQ process.

Smoke Management Team Members



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